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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,953	02/26/2004	Andre S. Chan	HSJ920030262US1	6686
44425	7590	10/12/2006	EXAMINER	
THOMAS R. BERTHOLD 18938 CONGRESS JUNCTION COURT SARATOGA, CA 95070			WATKO, JULIE ANNE	
			ART UNIT	PAPER NUMBER

2627

DATE MAILED: 10/12/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/788,953

Applicant(s)

CHAN ET AL.

Examiner

Julie Anne Watko

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 10 and 12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 10 and 12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02/26/2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Butt et al (US Pat. No. 7031104 B1).

As recited in claim 1, Butt et al show a data recording disk drive 10 comprising a housing 22, at least one disk 34 rotatable about an axis of rotation 36, a motor 38 attached to the housing for rotating the disk, a plate (68 or 200, for example) fixed to the housing, the plate extending circumferentially around a sector of the disk and radially across a radially outer annular region of the disk, the plate having a substantially planar surface facing a disk surface, said plate surface having a plurality of discrete surface features 108 arranged in a pattern of radially-spaced concentric rings (see Fig. 5B), each ring (70, for example) comprising a plurality of discrete spaced-apart surface features (84 and 88, for example; see Fig. 4B).

As recited in claims 2 and 3, Butt et al show that there is only one disk ("at least one disk", see col. 3, line 6), wherein the housing includes a base 30, the motor 38 and disk 34 being mounted on the base (see Fig. 2).

As recited in claim 2, Butt et al show that the plate ("base 200 having the arcuate channels", see col. 8, lines 44-45) is part of the base 200 and said plate surface faces the bottom ("lower", see col. 3, line 67) surface of the disk.

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As recited in claim 3, Butt et al show that the plate ("cover 68 having the arcuate channels", see col. 8, lines 43-44) is part of the cover 68 and said plate surface faces the top ("upper", see col. 6, line 66) surface of the disk.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 4-5, 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Butt et al (US Pat. No. 7031104 B1) in view of Machcha et al (US Pat. No. 6882501 B2).

Butt et al show a data recording disk drive as described above for claims 1-3.

As recited in claim 4, in addition to the above teachings, Butt et al show a rotatable stack of disks 34 axially spaced along a common axis of rotation 36, the motor 38 attached to the housing 22 for rotating the disk stack.

As recited in claim 4, Butt et al are silent regarding the plate having a substantially planar second surface facing a surface of a second disk, said second plate surface having a plurality of discrete surface features arranged in a pattern of radially spaced concentric rings, each ring comprising a plurality of discrete spaced-apart surface features.

As recited in claim 4, Machcha et al show a plate 720 having a substantially planar first surface facing a surface of a first disk, and a substantially planar second surface facing a surface of the second disk, said first and second plate surfaces each having a plurality of discrete surface features.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add a plate with two surfaces between the disks of Butt et al as taught by Machcha

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et al, and to provide two surfaces of the additional plate with the surface features in the pattern taught by Butt et al. The rationale is as follows: one of ordinary skill in the art would have been motivated to add a plate with two surfaces having the surface features in order to reduce cross-track motion and to decrease drag losses by modifying fluid flow as taught by Machcha (see col. 4, lines 46-57; see also col. 7, lines 18-25), and in order to reduce track mis-registration even more than when only a single featured plate surface is used so as to further improve track pitch and areal density as taught by Butt et al (see col. 8, lines 42-56).

As recited in claim 5, Butt et al are silent regarding a plurality of plates, each plate being located between a different set of two axially adjacent disks.

As recited in claim 5, Machcha et al show a plurality of plates 720, each plate being located between (see Fig. 7A) a different set of two axially adjacent disks 110.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add plural plates to the drive of Butt et al as taught by Machcha et al. The rationale is as follows: one of ordinary skill in the art would have been motivated to add plural plates in order to modify airflow between a larger number of disks, so as to increase data storage capacity while reducing cross-track motion and drag losses as taught by Machcha et al (see col. 4, lines 46-57; see also col. 7, lines 18-25).

Butt et al are silent regarding whether the surface features have the specifically claimed shapes recited in claims 10 and 12 (dimples and bumps, respectively).

There is no invention in changing the shape of known parts, when the functioning of the apparatus is not changed by the reshaping. *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966). Applicant has provided no evidence of unexpected results due to the claimed shape.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to arrive at the claimed shapes through the process of routine experimentation and optimization in the absence of criticality. The rationale is as follows: one of ordinary skill in the art would have been motivated to achieve a textured surface adapted to modify a fluid flow impinging on an adjacent slider assembly as taught by Machcha et al (see col. 7, lines 18-25).

Response to Arguments

5. Applicant's arguments with respect to claims 1-5, 10 and 12 have been considered but are moot in view of the new ground(s) of rejection.

The Examiner notes that the claims are silent regarding viscous shear forces. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julie Anne Watko whose telephone number is (571) 272-7597. The examiner can normally be reached on Monday through Friday, 1PM to 10PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne D. Bost can be reached on (571) 272-7023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Julie Anne Watko, J.D.
Primary Examiner
Art Unit 2627

October 11, 2006
JAW

A handwritten signature in black ink, appearing to be 'JAW', with a large, sweeping loop at the end.